AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in this application:

THE CLAIMS

1-68. (cancelled)

69. (previously presented) A method of reducing power fluctuations in an output of a laser, the method comprising the steps of:

- generating a laser signal utilizing a distributed feedback laser cavity,

- redirecting a signal portion of the laser signal back towards the laser cavity, and

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- inducing a saturable absorption grating in a saturable absorption element external to the laser cavity in the optical path of the laser signal as a result of wave mixing of the laser signal and the redirected signal portion,

whereby, in use, phase-discriminating properties of the induced saturable absorption grating in the optical path of the laser signal reduce power fluctuations in an optical output of the laser cavity.

70. (previously presented) A method as claimed in claim 69, wherein the method further comprises the step of post-amplifying the laser signal externally from the laser cavity and prior to the redirecting of the signal portion of the laser signal.

71. (previously presented) A method as claimed in claim 69, wherein the phase-discriminating properties of the induced saturable absorption grating provide a phase-conjugated feedback signal for reducing the power fluctuations in the optical output of the laser cavity.

72. (previously presented) A method as claimed in claim 69, wherein the phase-discriminating properties of the induced saturable absorption grating provide a signal for resonant pumping as well as for saturating gain in the laser cavity.

73. (previously presented) A method as claimed in claim 69, wherein the method comprises the step of generating the laser signal utilizing a plurality of laser cavities connected in series.

74. (Previously presented) A method as claimed in claim 73, wherein one saturable absorption element for external to the laser cavities, one saturable absorption grating and one optical redirecting element for redirecting the portion of the laser output are shared between the laser cavities.

75. (previously presented) A method as claimed in claim 69, wherein the step of generating the laser signal comprises utilizing a Bragg grating structure.

76. (previously presented) A method as claimed in claim 75, wherein the Bragg grating structure comprises one or more of a group comprising a chirped Bragg grating, a sampled Bragg grating, a phaseshifted Bragg grating, and an apodized Bragg grating.

77. (currently amended) A laser structure comprising:

- a distributed feedback laser cavity for generating a laser signal,

- an optical signal redirecting element external to the laser cavity and disposed in the optical path of the laser signal for redirecting a signal portion of the laser signal back towards the laser cavity, and

- a saturable absorption element external to the laser cavity and disposed in the optical paths of the laser signal and of the redirected signal portion ~~such that, in use,~~ for inducing a saturable absorption grating ~~is induced~~ in the saturable absorption element in the optical path of the laser signal as a result of wave mixing of the laser signal and the redirected signal portion,

whereby, ~~in use~~ phase-discriminating properties of the induced saturable absorption grating in the optical path of the laser signal reduce power fluctuations in an optical output of the laser cavity.

78. (previously presented) A laser structure as claimed in claim 77, further comprising:

- an optical signal amplification element disposed in the optical path of the laser signal between the output of the laser cavity and the redirecting element, for post-amplifying the laser signal from the laser cavity.

79. (previously presented) A laser structure as claimed in claim 78, wherein the saturable absorption element is disposed at one end of the signal amplification element in the optical path of the laser signal.

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80. (previously presented) A laser structure as claimed in claim 78, wherein the saturable absorption element is integrated with the signal amplification element in the optical path of the laser signal.

81. (currently amended) A laser structure as claimed in claim 78, wherein one or more of a group comprising the laser cavity, the signal amplification element, and the saturable absorption element are formed from erbium doped ~~fibre~~ fiber.

82. (currently amended) A laser structure as claimed in claim 77, wherein the laser structure is arranged ~~in use,~~ in a manner such that the phase-discriminating properties of the saturable absorption grating provide a phase-conjugated feedback signal for the laser cavity.

83. (currently amended) A laser structure as claimed in claim 77, wherein the laser structure is arranged in a manner such that ~~in use,~~ the phase-discriminating properties of the saturable absorption grating provide a signal for resonant pumping as well as for saturating gain in the laser cavity to a threshold value.

84. (Previously presented) A laser structure as claimed in claim 77, comprising a plurality of distributed feedback laser cavities connected in series for generating the laser signal.

85. (Previously presented) A laser structure as claimed in claim 84, wherein one saturable absorption element and one optical redirecting element are provided in the optical path of the laser signal after the plurality of laser cavities and are shared by the laser cavities.

86. (Previously presented) A laser structure as claimed in claim 77, wherein the laser cavity comprises a Bragg grating structure.

87. (Previously presented) A laser structure as claimed in claim 86, wherein the Bragg grating structure comprises one or more of a group comprising a chirped Bragg grating, a sampled Bragg grating, a phaseshifted Bragg grating, and an apodized Bragg grating.

88. (Previously presented) A laser structure as claimed in claim 78, wherein one or more of a group comprising the laser cavity, the signal amplification element, the saturable absorption element and the optical redirecting element are in the form of planar waveguides.

89. (currently amended) An external feedback device for a distributed feedback laser cavity, the feedback device comprising:

- an interconnecting element for coupling a laser signal from an output of the distributed feedback laser cavity into the external feedback device,

- an optical signal redirecting element disposed in the optical path of the laser signal within the external feedback device for redirecting a signal portion of the laser signal back towards the interconnecting element, and

- a saturable absorption element disposed in the optical paths of the laser signal and of the redirected signal portion within the external feedback device ~~such that, in use,~~ for inducing a saturable absorption grating is induced in the saturable absorption element in the optical path of the laser signal as a result of wave mixing of the laser signal and the redirected signal portion,

whereby, ~~in use,~~ phase-discriminating properties of the induced saturable absorption grating in the optical path of the laser signal reduce power fluctuations in the optical output of the laser cavity.